

Claims

What is claimed is:

- 1 1. A method for implementing enhanced query governor functions
2 comprising the steps of:
3 checking for a timeout value for a query,
4 responsive to identifying a timeout value for the query, resetting an
5 execution time for the query;
6 starting a monitor for each timeout value for the query;
7 starting the execution of the query;
8 monitoring the execution of predefined events during the execution of
9 the query; said predefined events including a begin or end of processing of
10 at least one of a trigger and a user defined function (UDF);
11 periodically checking execution status of the query;
12 responsive to identifying the query is executing, checking for any
13 expired timeout value; and
14 halting the execution of the query responsive to an identified expired
15 timeout value.
- 1 2. A method for implementing enhanced query governor functions
2 as recited in claim 1 wherein the step of starting monitors for each timeout
3 value for the query includes the step of starting monitors for each UDF and
4 trigger.
- 1 3. A method for implementing enhanced query governor functions
2 as recited in claim 1 wherein the step of monitoring the execution of said
3 predefined events includes the step of recording each said trigger event start
4 time and stop time.
- 1 4. A method for implementing enhanced query governor functions
2 as recited in claim 1 wherein the step of monitoring the execution of said
3 predefined events includes the step of recording each said user defined
4 function (UDF) start time and stop time.

1 5. A method for implementing enhanced query governor functions
2 as recited in claim 1 wherein the step of monitoring the execution of said
3 predefined events includes the step of recording empirical data for said
4 trigger, and said user defined function (UDF).

1 6. A method for implementing enhanced query governor functions
2 as recited in claim 5 includes the step of checking to determine based upon
3 said recorded empirical data whether in most likelihood that the query can
4 finish within timeout values for said trigger and said user defined function
5 (UDF), and responsive to determining in most likelihood the query will not
6 finish within said timeout values, execution of the query is not started.

1 7. A method for implementing enhanced query governor functions
2 as recited in claim 1 includes the step responsive to halting the execution of
3 the query of, setting return code values for said identified expired timeout
4 value for processing either said UDF or said trigger.

1 8. A method for implementing enhanced query governor functions
2 as recited in claim 1 includes the steps of monitoring events, and responsive
3 to an event to modify attributes, performing a modify attributes routine.

1 9. A method for implementing enhanced query governor functions
2 as recited in claim 8 wherein said modify attributes routine includes the steps
3 responsive to a monitor being requested, setting a timeout for the monitor.

1 10. A method for implementing enhanced query governor functions
2 as recited in claim 8 includes the steps responsive to an event to execute
3 query, performing an execute query routine.

1 11. Apparatus for implementing enhanced query governor
2 functions comprising:
3 a query governor program including a SQL processor program, said
4 SQL processor program for monitoring events, and said SQL processor
5 program responsive to an event to modify attributes, performing a modify
6 attributes routine; and responsive to an event to execute query, performing
7 an execute query routine; said modify attributes routine including the steps
8 responsive to a monitor being requested, setting a timeout for the monitor;
9 and
10 said query governor program including a user defined function (UDF)
11 and trigger monitor program; said UDF and trigger monitor program for
12 monitoring the execution of predefined events during the execution of the
13 query; said predefined events including a begin or end of processing of at
14 least one of a trigger and a user defined function (UDF).

1 12. Apparatus for implementing enhanced query governor
2 functions as recited in claim 11 wherein said SQL processor program
3 responsive to said event to execute query performing said execute query
4 routine includes the steps of checking to determine based upon said
5 recorded empirical data whether in most likelihood that the query can finish
6 within timeout values for said trigger and said user defined function (UDF),
7 and only responsive to determining in most likelihood the query can finish
8 within said timeout values, starting execution of the query.

1 13. Apparatus for implementing enhanced query governor
2 functions as recited in claim 11 wherein said SQL processor program
3 responsive to said event to execute query performing said execute query
4 routine includes the steps of identifying an expired timeout value for said
5 trigger or said UDF, halting the execution of the query.

1 14. A computer program product for implementing enhanced query
2 governor functions in a computer system, said computer program product
3 including instructions executed by the computer system to cause the
4 computer system to perform the steps of:
5 responsive to identifying an execute query event, checking for a
6 timeout value for a query,
7 responsive to identifying a timeout value for the query, resetting an
8 execution time for the query;
9 starting a monitor for each timeout value for the query;
10 starting the execution of the query;
11 monitoring the execution of predefined events during the execution of
12 the query; said predefined events including a begin or end of processing of
13 at least one of a trigger and a user defined function (UDF);
14 periodically checking execution status of the query;
15 responsive to identifying the query is executing, checking for any
16 expired timeout value; and
17 halting the execution of the query responsive to an identified expired
18 timeout value.

1 15. A computer program product for implementing enhanced query
2 governor functions as recited in claim 14 wherein said instructions further
3 cause the computer system to perform the steps of monitoring events, and
4 responsive to an event to modify attributes, performing a modify attributes
5 routine.

1 16. A computer program product for implementing enhanced query
2 governor functions as recited in claim 15 wherein said modify attributes
3 routine includes the steps responsive to a monitor being requested, setting a
4 timeout for the monitor.

1 17. A computer program product for implementing enhanced query
2 governor functions as recited in claim 14 wherein the step of monitoring the
3 execution of said predefined events includes the step of recording empirical
4 data for said trigger, and said user defined function (UDF).

1 18. A computer program product for implementing enhanced query
2 governor functions as recited in claim 17 includes the steps of checking to
3 determine based upon said recorded empirical data whether in most
4 likelihood that the query can finish within timeout values for said trigger and
5 said user defined function (UDF), and only responsive to determining in most
6 likelihood the query can finish within said timeout values, starting execution
7 of the query.